

TIMELINEZ

Volume 2 Issue 3

March 1984

\$1.00

TIMEX SITUATION REPORT
COME TO THE FAIRE
2068 GRAPHICS EXPLORED

USER GROUP INFORMATION
CARD SHUFFLE ROUTINES
SPARE PARTS ORDER FORM

TIMEX QUILTS BUT WE'LL GO ON

In a surprise announcement on Feb. 22, Timex said it was discontinuing production on all lines of its home computers. This came as quite a shock to the Bay Area User Group members, especially those who attended the Jan. 30, Bay meeting where (former) Timex VP, Billy Skyrme, gave a very impressive presentation featuring many exciting "soon-to-be-released" products for the 2068. Mr. Skyrme was subsequently let go by Timex along with more than 20 other computer division employees.

C. Michael Jacobi, VP of marketing and sales, said Timex withdrew because of negative future projections concerning the home computer market. He said "the industry is on a kamikaze path." He was concerned that future price wars could "cause the value of inventories to decline, making it difficult to make a reasonable profit." Timex said it would continue to make computers for other manufacturers.

Some analysts have also speculated that Timex was hurt because it had taken little interest in supporting its users. A New York Times article quotes one computer owner as saying, "When you called to ask any technical questions, their attitude was 'too damn bad.'"

This same uncooperative attitude was encountered by many of the 400 companies that sell programs and peripheral equipment for the Timex machines. Timex's overall philosophy seemed to be changing in the last few months, but apparently the damage had already been done.

Well, what happens now? As we go to press it has only been a couple of weeks since the announcement and so far, we have no word on any other companies possibly taking over the computer portion of the business from Timex. If anyone

T/S USERS AT THE COMPUTER FAIRE.

Ira Kuchek of the Computer Faire Inc., has provided a booth for us at the 8th West Computer Faire in San Francisco this month. It will be held at the Civic Auditorium and Brooks Hall. Tickets can be purchased at the door for \$12 one day or \$20 for all four days. The faire will be open:

Thurs. March 22, 11 am to 7pm
Fri. March 23, 10:30 to 8pm
Sat. March 24, 10:30 to 8pm
Sun. March 25, 10:30 to 5pm

Over 300 hardware/software exhibitors, plus conferences and seminars will highlight the show.

Eric Reiter is scheduled to speak at one of the conferences on "Scientific Data Acquisition on a Shoestring Budget." A shoestring budget would include a T/S 1000, of course.

Our booth will be staffed by club members all four days. If you wish to help at the booth please call Bob Orrfelt during the day at (415) 369-9136. We will have sign-up sheets for registering new members for each of the clubs.

See us at the Faire!

TIMELINEZ (C) IS THE JOINT PUBLICATION OF THREE TIMEX/SINCLAIR USER GROUPS IN THE SAN FRANCISCO / OAKLAND BAY AREA. OLD AND NEW MEMBERS ARE ALWAYS WELCOME - SO ARE HARDWARE, SOFTWARE, AND COMPUTER BEGINNERS. SEE YOU AT THE NEXT MEETING.

A BOOK REVIEW By Walt Gaby

While the T/S 2068 has only been on the market for a short time, there are already 3 books available which relate to this computer. The subject of this review is a book entitled:

**TIMEX SINCLAIR
COLOR GRAPHICS**
by Nick Hampshire

and published by:

Hayden Book Company
Rochelle Park, N.J.

Although unimportant, there are a couple of things which reflect the rush of publishing this document: (1) the cover features a picture of the T/S 2048! and (2) the text uses the word "colour" throughout (indicating that the book is a quick re-write of one for the Spectrum).

The contents of this book, not surprisingly, can be summarized from its table of contents:

Colour Plotting
High Resolution Graphics
Graph Plotting
Using the Video Memory
Scaling and Stretching
Rotating and Moving
3D Displays

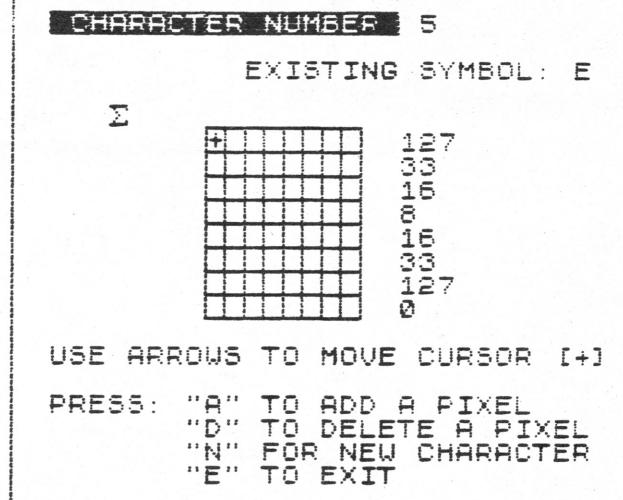
The book contains a total of 45 programs. Each is accompanied by a summary of the program structure and an example of the output.

The sequence of programs begins with fairly simple techniques and evolves to those which are more sophisticated and complex. All programs are in BASIC. For most techniques presented, this is quite adequate. But for some, such as the 3D Graphic, the output is excruciatingly slow.

For those who are interested in developing skills in graphic techniques (beyond the little provided in the User Manual), this book is an excellent start.

As an example of the technical quality of this book, there follows a very nice little program which takes the drudgery out of designing user-defined characters.

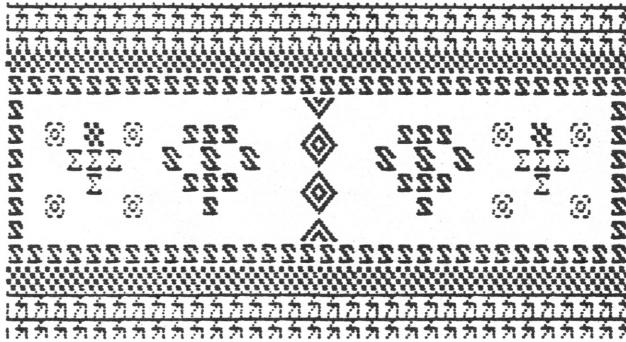
But first, a copy of the screen itself:



By moving the cursor and hitting A (add) or D (delete), one can design a special character in the 8x8 grid of 64 bits. An "A" causes the square to become dark blue and a "D" makes it white again. As you design, the character also evolves (at its normal size) in a space to the left of the grid. (For what it may be worth, the display also presents the decimal value of each of the eight bytes.)

Up to 21 separate characters can be designed. These characters are then available, through the graphics mode, by using letters A through U.

With minor exceptions, the program presented is Hampshire's; I have simply made it a bit more friendly (lines 810-870) and have provided an exit (lines 290 and 2000).



```

10>REM ****
20 REM * CHARACTER EDITOR *
30 REM * BY NICK HAMPSHIRE *
40 REM * from *
50 REM * T/S COLOR GRAPHICS *
60 REM ****
70 INK 0
80 PAPER 7
110 LET X=10: LET Y=6
115 DIM C(81
120 CLS : GO SUB 1000
130 PRINT AT 8,6;" CHARACTER E
EDITOR "
135 PRINT AT 17,5;" INPUT CHARAC
TER NUMBER"
140 PRINT AT 18,9;" (FROM 1 TO 2
1"
150 INPUT C
155 IF C<1 OR C>21 THEN GO TO 1
50
160 CLS
170 GO SUB 1000
180>GO SUB 700
190 GO TO 440
210 IF INKEY$="" THEN GO TO 210
215 LET X0=X: LET Y0=Y
220 IF INKEY$="A" THEN GO TO 50
0
230 IF INKEY$="D" THEN GO TO 60
0
240 IF INKEY$="5" THEN LET X=X-
1: GO TO 300
250 IF INKEY$="6" THEN LET Y=Y+
1: GO TO 300
260 IF INKEY$="7" THEN LET Y=Y-
1: GO TO 300
270 IF INKEY$="8" THEN LET X=X+
1: GO TO 300
280 IF INKEY$="N" THEN GO TO 10
0
290 IF INKEY$="E" THEN GO TO 20
00
295 GO TO 200
310 IF X<10 THEN LET X=10
320>IF X>17 THEN LET X=17
330 IF Y<6 THEN LET Y=6
340 IF Y>13 THEN LET Y=13
410 LET XC=X0*8: LET YC=(21-Y0)
*8
420 PLOT INVERSE 1;XC+2,YC+4
425 DRAW INVERSE 1;4,0
430 PLOT INVERSE 1;XC+4,YC+2
435 DRAW INVERSE 1;0,4
440 LET XC=X*8: LET YC=(21-Y)*8
450 PLOT XC+2,YC+4
460 DRAW 4,0
470 PLOT XC+4,YC+2
480 DRAW 0,4
490 GO TO 200
510 LET Q=X+22528+(32*Y)
520 IF PEEK (Q)=10 THEN GO TO 2
00
530 IF PEEK (Q)=8 THEN GO TO 20
0
540 POKE Q,10
550 LET P=0
560>GO SUB 900
570 GO TO 200
610 LET Q=X+22528+(32*Y)
620 IF PEEK (Q)=56 THEN GO TO 2
00
630 POKE Q,56
640 LET P=1
650 GO SUB 900
660 GO TO 200

```

```

710 FOR G=64 TO 128 STEP 8
715 PLOT 80,G
720 DRAW 64,0
725 NEXT G
730 FOR G=80 TO 144 STEP 8
735 PLOT G,64
740 DRAW 0,64
745 NEXT G
750 FOR Q=1 TO 8
755 PRINT AT Q+5,20;C(Q)
760 NEXT Q
810 PRINT AT 1,2;" CHARACTER NU
MBER ";
815>PRINT C
820 PRINT AT 3,12;"EXISTING SYM
BOL: ";CHR$ (143+C)
830 PRINT AT 17,2;"PRESS: ""A"""
TO ADD A PIXEL"
840 PRINT AT 18,9;"""D"" TO DEL
ETE A PIXEL"
850 PRINT AT 15,2;"USE ARROWS T
O MOVE CURSOR [+]"
860 PRINT AT 19,9;"""N"" FOR NE
W CHARACTER"
870 PRINT AT 20,9;"""E"" TO EXI
T"
880 PRINT AT 5,5;CHR$ (143+C)
890 RETURN
910 LET XU=7-(X-10)
915 LET Z=2+XU
920 LET U=Y-5
925 IF P=1 THEN GO TO 940
930 LET C(U)=C(U)+Z
935 GO TO 945
940 LET C(U)=C(U)-Z
945>FOR Q=1 TO 8
950 PRINT AT Q+5,20; "
955 PRINT AT Q+5,20;C(Q)
960 NEXT Q
965 LET S=USR CHR$ (143+C)
970 FOR Q=1 TO 8
975 POKE Q+(S-1),C(Q)
980 NEXT Q
985 PRINT AT 5,5;CHR$ (143+C)
990 RETURN
1010 PLOT 0,0
1020 DRAW 255,0
1030 DRAW 0,175
1040 DRAW -255,0
1050 DRAW 0,-175
1060 RETURN
2000 CLS : LIST

```

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CARD GAMES

BY: WILLIAM GORDON

Card games are interesting programming projects, but the random selection of cards (shuffling the deck), can be difficult. Assigning a card name or value to a random number between one and fifty-two is simple, but checking for duplicate selection can be costly in memory usage, and can require long execution times, especially if a full fifty-two cards are to be used.

The following subroutine is very economical in both memory and execution time. It occupies only 292 bytes of program space, and will completely randomize 52 card games in just over three seconds in "fast mode". If fewer cards are needed, the routine runs even faster.

Line 1000 sets up a string A\$, containing all 52 possible cards (Figure 1). Inverse characters are used for spades and clubs for clarity. Note the use of the letter T to represent 10. Line 1005 initializes C\$ where the results will be stored in memory location 1010, and can be altered for the number of cards needed for the game to be programmed. The remaining lines pick a two-byte card representation from A\$ at random and store them in C\$. Those two-bytes are then truncated from A\$ and the routine loops back for another selection. The final result is a string C\$ containing, in random order, the representation for a series of cards up to the number specified in line 1010.

If RAM space is critical for execution of your program, additional space in the variables section may be gained by adding 1035 let A\$=''. This is effective only if your game routine uses less than the full deck. If all 52 cards are used, then A\$ has already been fully collapsed by the routine.

Cards can now be used by taking two byte slices out of C\$, as illustrated in Figures 2 and 3.

```

10 RAND
15 FAST
20 GOSUB 1000
25 DIM B$(5,2)
30 FOR N=1 TO 5
35 LET B$(N)=C$(1 TO 2)
40 LET C$=C$(3 TO 1)
45 PRINT B$(N); ""
50 NEXT N
55 STOP
1000 LET A$="2H3H4H5H6H7H8H9HTHJ
H0HKHHAH233455678889HTSJSQSKSA
S2D3D4D5D6D7D8D9DTDJUDQDKDAD2C3C4
H5C6C7C8C9CTQJCDQKCHD"
1005 LET C$=""
1010 FOR N=1 TO 52
1015 LET C=1+INT (RND*LEN A$/2)
1020 LET C$=C$+A$(2*C-1 TO 2*C)
1025 LET A$=A$(1 TO 2*C-2)+A$(2*C
+1 TO 1)
1030 NEXT N
1035 LET A$=""
1040 RETURN

```

FIG. 1

```

10 RAND
15 FAST
20 GOSUB 1000
25 DIM B$(5,2)
30 FOR N=1 TO 5
35 LET B$(N)=C$(2*N-1 TO 2*N)
40 LET C$=B$(N); ""
50 NEXT N
55 STOP
1000 LET A$="2H3H4H5H6H7H8H9HTHJ
H0HKHHAH233455678889HTSJSQSKSA
S2D3D4D5D6D7D8D9DTDJUDQDKDAD2C3C4
H5C6C7C8C9CTQJCDQKCHD"
1005 LET C$=""
1010 FOR N=1 TO 52
1015 LET C=1+INT (RND*LEN A$/2)
1020 LET C$=C$+A$(2*C-1 TO 2*C)
1025 LET A$=A$(1 TO 2*C-2)+A$(2*C
+1 TO 1)
1030 NEXT N
1035 LET A$=""
1040 RETURN

```

FIG. 2

```

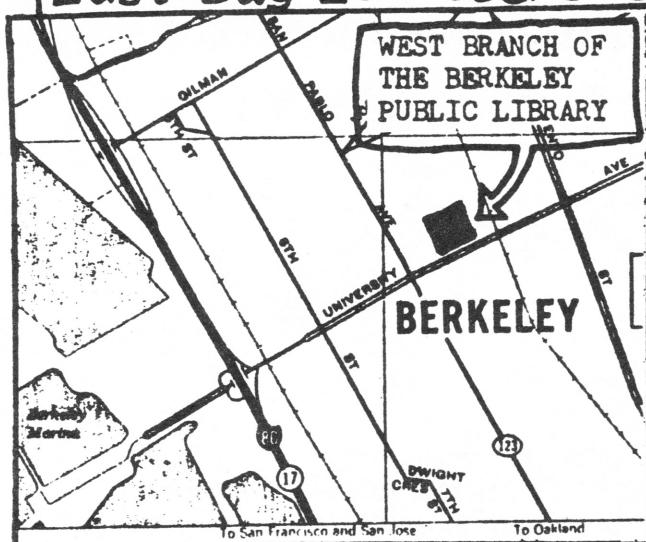
Shuffle Routine
1000 LET A$="2H3H4H5H6H7H8H9HTHJ
H0HKHHAH233455678889HTSJSQSKSA
S2D3D4D5D6D7D8D9DTDJUDQDKDAD2C3C4
H5C6C7C8C9CTQJCDQKCHD"
1005 LET C$=""
1010 FOR N=1 TO 52
1015 LET C=1+INT (RND*LEN A$/2)
1020 LET C$=C$+A$(2*C-1 TO 2*C)
1025 LET A$=A$(1 TO 2*C-2)+A$(2*C
+1 TO 1)
1030 NEXT N
1040 PRINT C$

```

TIMELINEZ is your news-letter. It will be as good as you make it. How about contributing an article, review, letter or whatever?

If you purchase an item advertised in TIMELINEZ please let the sponsor know where you found his ad. THANKS

East Bay Z80 User's Group



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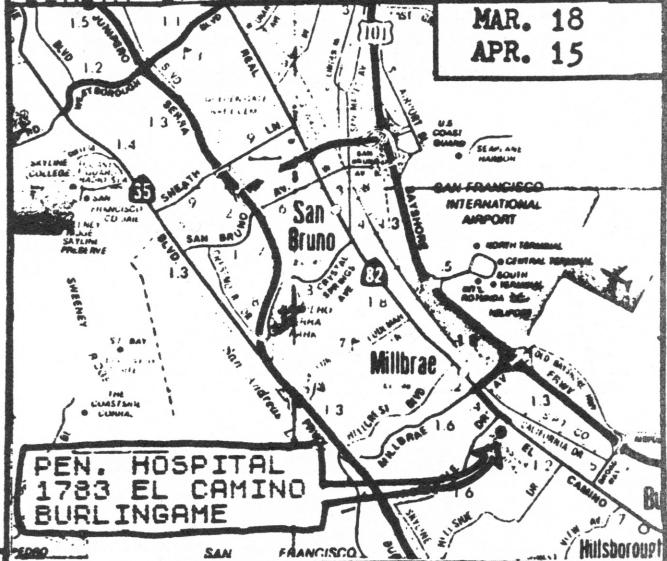
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MAR. 18
APR. 15

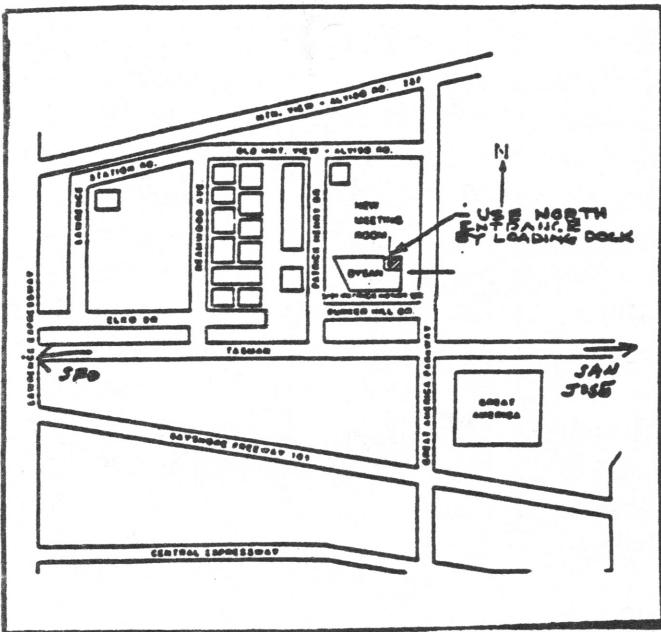


SOUTH BAY T/S USER GROUP

The next SB meeting will be
Tuesday, Mar. 27, 1984 at
7 PM at Dysan Corporation
Headquarters, 5201 Patrick
Henry Dr, Santa Clara.

For Information contact

SBAZUG President: Rita Carr
c/o TIMELINEZ
Box 1312
Pacifica CA 94044
(408) 738-2888 x4579



If you feel that your system requires repairs, please proceed as follows:

1. Call our toll-free "hot-line" 1-800-24-TIMEX to confirm the need for repair.
2. If the Technical Support Representative instructs you to return the system for repair, please mail your computer to:

TIMEX Product Service Center
Building 19
Adams Field
Little Rock, Arkansas 72203

Please be sure to enclose a letter which outlines the problem (as specifically as possible), with your name/address/zip code/telephone number/serial number. We also recommend that you insure your computer to protect it against shipment-related damage or loss.

To purchase extra support hardware, or replacement parts, please fill out the enclosed form as indicated and send to: Timex Product Service Center, Building #19, Adams Field, Little Rock, Arkansas 72203.

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SINing and Filling-in on the T/S 2068

The trig functions on the T/S computers (SIN, COS, TAN, ASN, ACOS and ATN) are ones I have always avoided since trigonometry was the one math course I detested. However, they are quite powerful graphic tools especially with the graphic power of the 2068. I'd like to illustrate how they can be used as well as the use of the DRAW command to fill in an area with color.

I'd like to produce a background for a graphic with green rolling hills and blue sky. To plot this scene point by point would consume lots of time and memory. So let's outline the hills by adapting a SIN curve. You can produce the basic SIN curve with the program:

```
50 FOR f=0 TO 254
 50 PLOT f, 30*SIN (f/10)+88
 70 NEXT f
```

This program produces somewhat sharp rolling hills, but by changing the variables the curve can be manipulated. In this case 30 determines the height of the peaks, 10 the distance between peaks and 88 the position of the curve on the screen. Enter this program and experiment by changing these variables. I have found a suitable curve with the instruction:

```
100 FOR f=0 TO 254
 110 PLOT f, 15*SIN(f/50)+92
 130 NEXT f
```

Let's make the background the grass color with:

```
50 PAPER 4: INK 1
```

The quickest way to fill in the sky is with the DRAW command directing a line from each point on the curve to the top of the screen. We can do this by adding:

```
120 DRAW 0, 175-(15*SIN (f/50)
  +92)
```

In this case we are using the SIN formula to determine the distance of each point on the curve to the top of the screen. We then DRAW in that distance, with the sky color. The scene can be finished by drawing objects (houses, trees etc.) onto the green PAPER.

Joel Brody

TRY THESE:

The following 2 programs show some other uses of the trig functions and the DRAW command.

```
10 FOR f=0 TO 254
 20 PLOT f,30*SIN (f/10)+88
 30 DRAW 10,10: DRAW -10,8
 40 NEXT f
```

```
10 FOR f=0 TO 65 STEP .1
 20 PLOT 2*f*SIN f+125, f*CO8
  f+88
 30 NEXT f
```

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Things I've Tried

Usually the products I write about in this column are picked from a stack of press releases sent each month to *DDJ*. I rarely have the product in front of me when writing about it, and descriptions here are not intended to be endorsements.

Once in a while I do get the opportunity to try out products, and I'd like to share a few with you.

You may have gathered from previous columns that I like inexpensive computers, particularly the Timex products. One of the wonderful things you can do with a TS1000 or 1500 is learn Z80 assembly language. BASIC on a Timex runs achingly slow, particularly since some 60% of the microprocessor's time is spent updating the screen. Machine code programs, however, run literally hundreds of times as fast as BASIC ones. Several good books have been written about machine code programming on the TS1000. The best of these are two by Dr. Ian Logan, whose knowledge of the ZX80 and 81 (predecessors of the TS1000) is exceeded only by that of Clive Sinclair (inventor of these and the Spectrum, a version of which should now be available, modified by Timex and called the 2068).

You cannot write effective code for these little wonders without knowing the entry points for the various system variables. Melbourne House, an international publishing company, has Dr. Logan's *Understanding Your ZX81 ROM*, \$14.95, and *The Complete TS1000/Sinclair ZX81 ROM Disassembly*, \$19.95, and their own apparently authorless *Machine Language Programming Made Simple for Your Sinclair & Timex TS1000*, \$14.95. I have all three of these, and they are excellent. Melbourne also offers *Not Only 30 Programs for the Sinclair ZX81*, \$9.95, program listings that ingeniously all run in the "unexpanded" TS1000 (2K RAM), and what appears to be the ultimate hardware manual for the two "simpler" machines, *The Ins and Outs of the Timex TS1000 & ZX81*, by Don Thomasson, \$12.95. Add \$2 for p. & h., and residents of California, Maryland, and Tennessee add sales tax. Melbourne carries software and books for Timex, TRS80, Vic 20, and Commodore 64. They will send you a free catalog and are looking for contributions from authors.

Far better than hand-assembling your machine code programs and then trying to POKE them into various memory locations is to use an assembler. International Publishing & Software Inc. offers ZX Assembler. It has

its own editor. You write programs using standard Z80 mnemonics. No need to figure jump addresses; just use labels and the assembler figures them for you. Programs assemble in seconds and execute either directly from ZX Assembler's monitor mode or from a program that executes with a USR statement where the code is in a REM statement created by the assembler. The assembler also retains the source code in a second REM statement.

You can SAVE the entire program on tape, and alter, modify, and reassemble it. Those familiar with machine code on the TS will appreciate this method, because code loaded in other areas is either difficult to save or cannot use relative addressing. In the monitor mode you can move whole blocks of code from one memory location to another, examine and modify any location of RAM, inspect and modify registers, and search the entire memory for any byte sequence. ZX Assembler costs \$14.95. International Publishing provides a free catalog and the name of the nearest dealer that handles this and other useful products, including ZX Bug, \$14.95, for debugging, editing, and running machine codes, Toolkit, \$14.95, to add nine powerful commands, including a renumber that changes all GOTO and GOSUB references, Fastload, \$19.95, to load any program four to six times as fast, ZX Forth, \$29.95, for the ease of BASIC with machine code speed, and a stack of clever games.

If I knew that a product did not live up to its claims, I would not list it here. Usually I have no way of knowing that, because I just go by the press releases, which, naturally, are never unfavorable. Such was the case with Memotech, whose various memory modules and auxiliary keyboard for the TS1000 I cited a few months back. I believed their hype myself and shortly afterward bought their keyboard and 32K memory for my system. That first 32K memory didn't work at all, and I took it back to the store. The replacement 32K refused to work in conjunction with either Memotech's keyboard or the Timex printer. This was not much use to me since I needed the printer for listings during program development. I took my entire system to the store, and they could get the 32K memory and auxiliary keyboard to work with their systems only separately, not together.

I called Memotech several times for help, and they kept insisting that they had tested a setup identical to mine with no problems. Finally they agreed to look at my system if I would send it to them and, if either of their

products was defective, to replace or fix it. I called them when the system was in their hands, and the technician to whom I spoke said he had set up my system and it had been running perfectly for ten minutes, and he could find nothing wrong with it. But while I was on the phone with him he said, "Wait a minute. It's failing." He conceded that there "might" be a problem with the memory module, which Memotech replaced. They then sent back my system.

When the system returned, again I could make the 32K memory work by itself only, not together with either the Timex printer or Memotech's keyboard. The keyboard, too, only worked by itself. The store from which I bought the memory unit was kind enough to take it back in exchange for a Timex 16K memory (and even refunded the difference in price!), with which I have had no problems. I sent the keyboard back to Memotech, requesting a refund, citing the "free ten-day trial period" clause in their warranty, stating that, while the ten days had elapsed all the problems had begun the instant I began using the keyboard and that I had been in contact with them right from the start. They refused to give me a refund, claiming that the refund applied only to those who had purchased directly from them, but instead returned a replacement for my keyboard. If I wanted a refund, they told me, I would have to get it where I bought the keyboard.

The store, of course, did not want to give me a refund, because the 1500 would soon be released with its "real" keyboard, and auxiliary keyboards for Timex computers would soon be obsolete. They said that I should contact Memotech for a refund. (My guess is that Memotech is stuck with a warehouse full of these useless keyboards.) As I expected, the replacement worked no better than the original. At this point I no longer had their 32K memory, but the keyboard worked with neither Timex's printer nor the 16K memory.

By this time I had heard from the South Bay Area Timex/Sinclair Users' Group (mentioned in my October column) that Memotech was offering a free "modification" to purchasers of their 32K memories. It seems several other people had discovered that their memories did not work with Timex printers. Yet all the time I had been in communication with Memotech they insisted there was no incompatibility between their products and Timex

JOYSTICK PATCH FOR TIMEX FROGGER
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FROGGER BY CORN SOFTWARE + SEGA,
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POKE A,N

		INSTRUCTION
166600	219	IN A,29
166601	29	
166602	254	OP 255
166603	055	
166604	40	JR Z,25
166605	25	
166606	71	LD B,A
166607	803	BIT 4,A
166608	103	
166609	32	JR NZ,8
166700	0	
166711	207	RST 08H
166722	34	"8"
16714	203	BIT 0,A
16715	71	
16718	203	BIT 1,A
16719	79	
16723	203	BIT 2,A
16724	87	
16728	203	BIT 3,A
16729	95	

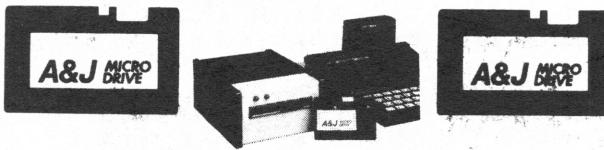
NOTE: HITTING THE FIRE BUTTON
WHILE PLAYING CAUSES A BREAK
IN THE PROGRAM AND A RETURN TO
BASIC

(CONT. FROM PAGE 24)

printers; furthermore, they had never heard of anyone having any problems like mine. Altogether, I went through three 32K memory modules and two keyboards without finding even one I could use.

Now Dr. Dobb's has received a press pack announcing Memotech's \$595 MTX-512 World Class Computer™. It has a Z80A 4MHz processor with 80K standard RAM (expandable to 512K; 16K is dedicated to video). Among other things, it comes with Oxford BASIC and a language called NODDY, a real time clock, and a 79-key keyboard. I hope this product is better than the peripherals I couldn't use, and that others will encounter more competent service and better support and attitude than I did. I know I'll never get the chance to find out.

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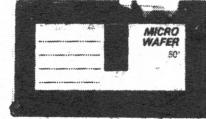
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TIMEX sinclair

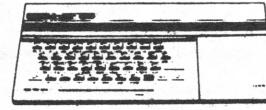
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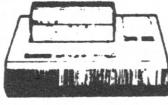


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Plans to do this, they will have to move fast before public interest declines and production facilities become committed to other projects. TIMELINEZ will monitor the situation closely for any new developments.

In the meantime, we have contacted a number of parties to learn of their plans. The following information was gathered from this survey:

BAY AREA USER GROUPS: All three user groups plan business as usual. If anything, the support and exchange of information between group members should become more important during this period of uncertainty. Rita, Joel and George all report that they plan no immediate changes in group operations.

SYNC AND T/S USER MAGAZINES: Sync reports that they plan to continue with their bi-monthly format and that ad revenue looks very good so far. T/S User still plans to re-enter the market with an April issue.

SUNSET ELECTRONICS (San Fran.): Sunset plans to continue support for the Timex computer. John reports that he has a very large selection of H/W and S/W on hand and he also hopes to purchase more products from Timex inventory at discounted prices. Call for details. 415-665-8330

SOFTBYT MICRO SYSTEMS (Foster City): Dennis Gonzales of Softbyt was just starting to handle Timex products when the news hit. He has pledged at least six months of additional support for Timex and 3rd party products. Call for details on special offers: 415-571-5288

TIMEX: Timex says it will continue to honor all warranty contracts and that its repair facility will remain open.

SINCLAIR RESEARCH: TIMELINEZ contacted a source within Sinclair to learn that they have no plans to re-enter the U.S. market with the ZX81 or Spectrum. They do plan to introduce their new QL computer (see Feb. TIMELINEZ) to the U.S. market through mail order sometime in the third quarter. If you would like to suggest that they reconsider their decision about T/S support write:

Sinclair Research
50 Staniford St.
Suite 800
Boston, MA 02114

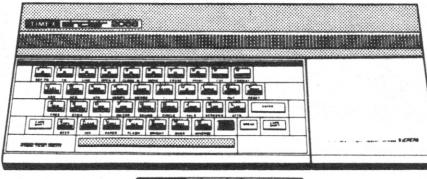
Sinclair Research
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Cambridge, CB2 1SN
UK

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